

What is claimed is:

1. A lens drive control apparatus for a camera having a zoom lens provided with a plurality of movable variable lens groups for changing a focal length thereof, at least one of
5 said variable lens groups comprising a switching lens group having two sub lens groups, wherein one of said two sub lens groups serves as a movable sub lens group selectively moving in the optical axis direction with respect to the other sub lens group, said lens drive control apparatus comprising:

10 a main drive device for moving said plurality of variable lens groups along an optical axis thereof in accordance with a predetermined movement path between a short focal length extremity and a long focal length extremity; and

15 a sub lens group drive device for moving said movable sub lens group within said switching lens group so as to be positioned at one of a movement extremity on the object side and a movement extremity on the image side, with respect to said other sub lens group, in accordance with a corresponding zooming zone of a short focal length zooming zone from the
20 short focal length extremity to an intermediate focal length position, and a long focal length zooming zone from said intermediate focal length to the long focal length extremity.

2. The lens drive control apparatus according to claim

1, wherein:

said sub lens group drive device moves said movable sub lens group to one of said movement extremity on the object side and said movement extremity on the image side in accordance with said corresponding zooming zone when said main drive device moves said variable lens groups along the optical axis.

3. The lens drive control apparatus according to claim 1, wherein:

said sub lens group drive device moves said movable sub lens group to one of said movement extremity on the object side and said movement extremity on the image side in accordance with said corresponding zooming zone when said main drive device is stopped.

4. The lens drive control apparatus according to claim 1, wherein:

said camera further comprises a photometering device and a distance measurement device; and

said sub lens group drive device moves said movable sub lens group to one of said movement extremity on the object side and said movement extremity on the image side in accordance with said corresponding zooming zone after one of said photometering device and said distance measurement device is

performed.

5 5. The lens drive control apparatus according to claim
1, wherein said camera further comprises a photometering device,
a distance measurement device, a shutter device, a
photometering/distance measuring switch for actuating said
photometering device and said distance measurement device,
and a release switch for actuating said shutter device; and
wherein

10 said sub lens group drive device moves said movable sub
lens group to one of said movement extremity on the object
side and said movement extremity on the image side in accordance
with said corresponding zooming zone after one of said
photometering device and said distance measurement device is
performed upon operation of said photometering/distance
15 measuring switch regardless of whether said release switch
has been operated.

20 6. The lens drive control apparatus according to claim
1, wherein said camera further comprises a photometering device,
a distance measurement device, a shutter device, a
photometering/distance measuring switch for actuating said
photometering device and said distance measurement device,
and a release switch for actuating said shutter device; and
wherein

said sub lens group drive device moves said movable sub lens group to one of said movement extremity on the object side and said movement extremity on the image side in accordance with said corresponding zooming zone after one of said photomentering device and said distance measurement device is performed upon operation of said photomentering/distance measuring switch, and before said shutter device is actuated upon operation of said release switch.

7. The lens drive control apparatus according to claim 1, wherein said camera further comprises a distance measurement device; and wherein

said sub lens group drive device moves said movable sub lens group from said one of said movement extremity on the object side and said movement extremity on the image side, in accordance with said corresponding zooming zone, toward the other of said movement extremity on the object side and said movement extremity on the image side in order to carry out focusing based on a result of a distance measurement by said distance measurement device.

8. The lens drive control apparatus according to claim 4, wherein:

after said sub lens group drive device moves said movable sub lens group to said one of said movement extremity on the

object side and said movement extremity on the image side in accordance with said corresponding zooming zone, said sub lens group drive device further moves said movable sub lens group toward the other of said movement extremity on the object side and said movement extremity on the image side in order to carry out focusing based on a result of a distance measurement by said distance measurement device.

9. The lens drive control apparatus according to claim 8, wherein:

said sub lens group drive device moves said movable sub lens group back to said one of said movement extremity on the object side and said movement extremity on the image side, upon an operation of said photomentering/distance measuring switch being released.

10. The lens drive control apparatus according to claim 5, wherein:

after said sub lens group drive device moves said movable sub lens group to said one of said movement extremity on the object side and said movement extremity on the image side in accordance with said corresponding zooming zone, said sub lens group drive device further moves said movable sub lens group toward the other of said movement extremity on the object side and said movement extremity on the image side in order to carry

out focusing based on a result of a distance measurement by said distance measurement device.

11. The lens drive control apparatus according to claim 10, wherein:

said sub lens group drive device moves said movable sub lens group back to said one of said movement extremity on the object side and said movement extremity on the image side, after said shutter device is actuated.

12. The lens drive control apparatus according to claim 7, wherein said sub lens group drive device comprises:

two sub lens barrels which support two sub lens groups of said switching lens group, and which guide said two sub lens groups so as to be relatively rotatable and to be movable between a mutually close position and a mutually distant position, with respect to the optical axis;

an actuator ring, which is engageable with one of said two sub lens barrels, including two engagement portions and cam surfaces formed between said two engagement portions, wherein said actuator ring rotates said one sub lens barrel of said two sub lens barrels between two rotational extremities thereof, and moves said one sub lens barrel in the optical axis direction;

a retaining ring including a guide portion which only

allows linear movement in the optical axis direction of said
one sub lens barrel at each said two rotational extremities,
wherein the rotational movement range of said one sub lens
barrel is restricted by said two rotational movement
5 extremities; and

a motor for rotating said actuator ring forwardly and
reversely; wherein

after said actuator ring is rotationally driven in a first
direction by said motor so that a switching operation of said
10 one sub lens barrel from one to the other of said two rotational
movement extremities is performed, said motor is driven in
a second direction so that said one sub lens barrel moves in
the optical axis direction via said guide portion and said
cam surfaces while rotating from said other of said two
15 rotational movement extremities toward said one of said two
rotational movement extremities to perform a focusing
operation.

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